September 21, 2005

Mr. Gregory Trundy
Rumford-Mexico Sewerage District
P.O. Box 160
Rumford, ME 04276

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100552
Maine Waste Discharge License (WDL) Application #W002686-5L-F-R
***Final Permit/License***

Dear Mr. Trundy:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision*."

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMRs) may not reflect the revisions in this permitting action for several months however, you are required to report applicable test results for parameters required by this MEPDES permit/WDL that do not appear on the DMR. Please see attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc. cc: Denise Behr, DEP Roger Janson, USEPA

**DMR Lag**

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months.

This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.

2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.

3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

   EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

***Phil Garwood***

**IN THE MATTER OF**

| | | |
|---|---|---|
| RUMFORD-MEXICO SEWERAGE DISTRICT | ) | MAINE POLLUTANT DISCHARGE |
| MEXICO, OXFORD COUNTY, MAINE | ) | ELIMINATION SYSTEM PERMIT |
| PUBLICLY OWNED TREATMENT WORKS | ) | AND |
| #ME0100552 | ) | WASTE DISCHARGE LICENSE |
| #W002686-5L-F-R | ) | |
| **APPROVAL** | ) | **RENEWAL** |

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et seq*. and Maine law, 38 M.R.S.A., Section 414-A *et seq*., and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the RUMFORD-MEXICO SEWERAGE DISTRICT (District), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

## APPLICATION SUMMARY

The District has applied for renewal of Waste Discharge License #W002686-5L-D-R, which was issued on August 10, 2000, WDL modification #W002686-5L-E-M / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100552, which was issued on June 29, 2001, and two administrative modifications issued on October 19, 2001 and April 23, 2004. The 6/29/01 permitting action authorized the monthly average discharge of up to 2.65 million gallons per day (MGD) of secondary treated wastewater to the Androscoggin River, Class C, in Mexico, Maine and expired on August 10, 2005. The 10/19/01 administrative modification eliminated the monthly maximum limit for septage receiving and the 4/23/04 administrative modification served to eliminate the weekly average limit of 10.8 lbs./day for total phosphorus.

## PERMIT SUMMARY

**This permitting action is similar to the 8/10/00 licensing action, 6/29/01 permitting action and all subsequent administrative modifications thereof in that it is:**

1. Carrying forward the monthly average discharge flow limit of 2.65 MGD;

2. Carrying forward technology-based monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand ($BOD_5$) and total suspended solids (TSS);

3. Carrying forward the requirement to achieve a minimum of 85% removal for $BOD_5$ and TSS;

4. Carrying forward the daily maximum, technology-based concentration limit of 0.3 ml/L for settleable solids;

5. Carrying forward the monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

6. Carrying forward the daily maximum, technology-based concentration limit of 1.0 mg/L for total residual chlorine (TRC);

7. Carrying forward the monthly average concentration and mass reporting requirements for total phosphorus and orthophosphate through permit expiration;

8. Carrying forward the weekly average concentration and mass reporting requirements for total phosphorus and orthophosphate through September 30, 2006;

9. Carrying forward the technology-based pH range limit of 6.0 – 9.0 standard units (SU);

10. Carrying forward screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except for a reduction in phosphorus monitoring beginning in calendar year 2007.

**This permitting action is different from the 8/10/00 licensing action, 6/29/01 permitting action and all administrative modifications thereof in that it is:**

1. Establishing a daily maximum discharge flow reporting requirement;

2. Revising the minimum monitoring frequency requirement for total phosphorus from once per week to once per month upon completion of calendar year 2006 phosphorus monitoring;

3. Revising the minimum monitoring frequency requirement for orthophosphate from once per week to twice per month upon completion of calendar year 2006 phosphorus monitoring; and

4. Eliminating the weekly average concentration and mass reporting requirements for total phosphorus and orthophosphate upon completion of calendar year 2006 phosphorus monitoring based on the revised monitoring frequencies.

## CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated September 21, 2005, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

**ACTION**

THEREFORE, the Department APPROVES the above noted application of the RUMFORD-MEXICO SEWERAGE DISTRICT to discharge a monthly average flow of up to 2.65 MGD of secondary treated wastewater to the Androscoggin River, Class C, in Mexico, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. The expiration date of this permit is five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS _____DAY OF_____, 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAWN R. GALLAGHER, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 28, 2005
Date of application acceptance: March 28, 2005

Date filed with Board of Environmental Protection: _____.

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY
#ME0100552 / #W002686-5L-F-R September 21, 2005

## SPECIAL CONDITIONS
## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period **beginning the effective date of this permit and lasting through permit expiration**, the permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #001A** to the Androscoggin River. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

| Effluent Characteristic | Discharge Limitations | | | | | | Minimum Monitoring Requirements | |
|---|---|---|---|---|---|---|---|---|
| | Monthly Average as specified | Weekly Average as specified | Daily Maximum as specified | Monthly Average as specified | Weekly Average as specified | Daily Maximum as specified | Measurement Frequency as specified | Sample Type as specified |
| **Flow** *[50050]* | 2.65 MGD *[03]* | --- | Report MGD *[03]* | --- | --- | --- | Continuous *[99/99]* | Recorder *[RC]* |
| **$BOD_5$** *[00310]* | 663 lbs./day *[26]* | 995 lbs./day *[26]* | 1,105 lbs./day *[26]* | 30 mg/L *[19]* | 45 mg/L *[19]* | 50 mg/L *[19]* | 3/Week *[03/07]* | Composite *[24]* |
| **$BOD_5$ Percent Removal[(2)]** ***[81010]*** | --- | --- | --- | 85% *[23]* | --- | --- | 1/Month *[01/30]* | Calculate *[CA]* |
| **TSS** *[00530]* | 663 lbs./day *[26]* | 995 lbs./day *[26]* | 1,105 lbs./day *[26]* | 30 mg/L *[19]* | 45 mg/L *[19]* | 50 mg/L *[19]* | 3/Week *[03/07]* | Composite *[24]* |
| **TSS Percent Removal[(2)]** ***[81011]*** | --- | --- | --- | 85% *[23]* | --- | --- | 1/Month *[01/30]* | Calculate *[CA]* |
| **Settleable Solids** *[00545]* | --- | --- | --- | --- | --- | 0.3 ml/L *[25]* | 1/Day *[01/01]* | Grab *[GR]* |
| ***E. coli* Bacteria[(3)]** *[31633]* | --- | --- | --- | 142/100 ml[(4)] *[13]* | --- | 949/100 ml *[13]* | 3/Week *[03/07]* | Grab *[GR]* |
| **Total Residual Chlorine[(5)]** *[50060]* | --- | --- | --- | --- | --- | 1.0 mg/L *[19]* | 1/Day *[01/01]* | Grab *[GR]* |
| **pH** *[00400]* | --- | --- | --- | --- | --- | 6.0 – 9.0 SU *[12]* | 1/Day *[01/01]* | Grab *[GR]* |
| **Orthophosphate (June 1 – Sept. 30) [(6)]**<br>• **Through 9/30/06**<br>• **6/1/07 through permit expiration** *[04175]* | Report lbs./day<br>Report lbs./day *[26]* | Report lbs./day<br>--- *[26]* | --- | Report mg/L<br>Report mg/L *[19]* | Report mg/L<br>--- *[19]* | --- | 1/Week *[01/07]*<br>2/Month *[02/30]* | Composite *[24]* |
| **Total Phosphorous (June 1 – Sept. 30) [(7)]**<br>• **Through 9/30/06**<br>• **6/1/07 through permit expiration** *[00665]* | Report lbs./day<br>Report lbs./day *[26]* | Report lbs./day<br>--- *[26]* | --- | Report mg/L<br>Report mg/L *[19]* | Report mg/L<br>--- *[19]* | --- | 1/Week *[01/07]*<br>1/Month *[01/30]* | Composite *[24]* |

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

**FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.**

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

2. During the period **beginning 12 months prior to permit expiration and lasting through permit expiration**, the permittee shall perform **SCREENING LEVEL WHOLE EFFLUENT TOXICITY (WET) and CHEMICAL-SPECIFIC TESTING** as follows:

| **Whole Effluent Toxicity (WET)** [8] | **Daily Maximum** | **Minimum Frequency** | **Sample Type** |
|---|---|---|---|
| **Acute No Observed Effect Level (A-NOEL)** | | | |
| Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]* | Report % *[23]* | 1/Year *[01/YR]* | Composite *[24]* |
| Vertebrate-**Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]* | Report % *[23]* | 1/Year *[01/YR]* | Composite *[24]* |
| **Chronic No Observed Effect Level (C-NOEL)** | | | |
| Invertebrate-**Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]* | Report % *[23]* | 1/Year *[01/YR]* | Composite *[24]* |
| Vertebrate-**Brook Trout** (*Salvelinus fontinalis*) *[TBQ6F]* | Report % *[23]* | 1/Year *[01/YR]* | Composite *[24]* |
| **Chemical-Specific (Priority Pollutants, PP)** [9] *[50008]* | Report ug/L *[28]* | 1/Quarter *[01/90]* | Composite/Grab *[24/GR]* |

**FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.**

## SPECIAL CONDITIONS

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

### FOOTNOTES:

1. **Monitoring** – All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

2. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand and total suspended solids for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L.

3. **Seasonal Limits** – *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to require year-round disinfection to protect the health, safety and welfare of the public.

4. **Bacteria Reporting** – The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

5. **TRC Monitoring** – Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. For instances when a facility has not disinfected with chlorine-based compounds for an entire reporting period, the facility shall report "NODI-9" for this parameter on the monthly DMR.

6. **Total Phosphorus –** Total phosphorus monitoring shall be performed in accordance with Attachment A of this permit, *Protocol For Total P Sample Collection and Analysis* unless otherwise specified by the Department.

7. **Orthophosphate –** Orthophosphate monitoring shall be performed in accordance with Attachment B of this permit, *Protocol For Orthophosphate Sample Collection and Analysis* unless otherwise specified by the Department.

## SPECIAL CONDITIONS

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

**FOOTNOTES**:

8. **Whole effluent toxicity (WET) testing** – Definitive WET testing is a multi-concentration testing event [a minimum of five dilutions bracketing the critical acute and chronic dilutions of 0.98% and 0.25%, respectively, (mathematical inverse of dilution factors)], which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points.

   **Beginning 12 months prior to permit expiration and lasting through permit expiration**, the permittee shall initiate WET testing at a frequency of once per year (1/Year) on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis)*. Results shall be reported to the Department within 30 days of the permittee receiving the test results from the laboratory conducting the testing. Invalid or problematic test results shall be identified in the submittal.

   Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

   a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.

   b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

   **The permittee is also required to analyze the effluent for the parameters specified in the analytic chemistry on the form in Attachment C of this permit every time a WET test is performed for compliance with this permit. Analytical chemistry is not required for WET tests conducted for a toxicity identification evaluation (TIE), toxicity reduction evaluation (TRE) or for other investigative purposes.**

9. **Priority Pollutants –** (chemical-specific testing pursuant to Department rule Chapter 530.5) are those parameters listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published at 40 CFR Part 122, Appendix D, Tables II and III.

   Chemical-specific testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Chemical-specific testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing**.**

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

**FOOTNOTES**:

**For the purposes of DMR reporting, enter a "NODI-9" for *NO* *testing done this monitoring period* or "1" for *YES*, *testing done this monitoring period*.**

**Beginning 12 months prior to permit expiration and lasting through permit expiration,** the permittee shall conduct screening level chemical-specific testing at a minimum frequency of once per quarter in consecutive calendar quarters.

All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with USEPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

### B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharge shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

### C. DISINFECTION

If chlorination is used as the means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized followed by a dechlorination system if the imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied, if necessary, shall provide a TRC concentration that will effectively reduce *E. coli* bacteria levels to or below those specified in Special Condition A, "*Effluent Limitation and Monitoring Requirements*," above.

## SPECIAL CONDITIONS

### D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade IV** certificate pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

### E. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13$^{th}$) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15$^{th}$) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
17 State House Station
Augusta, ME 04333-0017

### F. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the wastewater collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

### G. DISPOSAL OF SEPTAGE WASTE IN WASTEWATER TREATMENT FACILITY

During the effective period of this permit, **the permittee is authorized to receive and introduce a maximum of 10,000 gallons of septage per day** into its wastewater treatment facility. Receipt of holding tank wastewaters is authorized and shall be recorded as holding tank wastewaters and shall be reported in the treatment facility's influent flow.

1) This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.

2) At no time shall addition of septage cause or contribute to effluent quality violations. If such conditions do exist, receipt of septage shall be suspended until effluent quality can be maintained.

## SPECIAL CONDITIONS

## G. DISPOSAL OF SEPTAGE WASTE IN WASTEWATER TREATMENT FACILITY (cont'd)

3) The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste treatment influent and test results.

4) Addition of septage shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment facility becomes overloaded, receipt of septage shall be reduced or terminated in order to eliminate the overload condition.

c. Septage known to be harmful to the treatment processes shall not be accepted. Wastes that contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.

d. Holding tank waste water shall not be recorded as septage and should be reported in the treatment facility's influent flow.

## H. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

## I. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and

   (b) any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

## SPECIAL CONDITIONS

### J. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall develop and maintain a Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

**Once the Wet Weather Management Plan has been approved, the permittee shall review their plan annually and record any necessary changes to keep the plan up to date.**

### K. OPERATION & MAINTENANCE (O&M) PLAN

The permittee shall maintain a current written comprehensive Operation & Maintenance (O&M) Plan at the facility. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

**By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades,** the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

**Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility,** the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

### L. CHAPTER 530.5(B)(7)(c)(iii) CERTIFICATION

**By December 31 of each calendar year *[95799]***, the permittee shall provide the Department with a certification that none of the following has occurred since the effective date of this permit:

1. Increases in the number, types and flows of industrial, commercial or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic.

2. Changes in the condition or operations of the facility that may increase the toxicity of the discharge.

3. Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge.

4. Increases in the type or volume of hauled wastes accepted by the facility.

## SPECIAL CONDITIONS

## M. CHAPTER 530.5(B)(7)(c)(iii) CERTIFICATION (cont'd)

1. The Department reserves the right to reinstate annual (surveillance level) testing or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedences of ambient water quality criteria/thresholds.

## N. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time, and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

## O. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

# Attachment A

# Protocol for Total P Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P B.5 E.

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved by the addition of 2 mls of concentrated $H_2SO_4$ per liter and refrigerated at 0-4 degrees C. The holding time for a preserved sample is 28 days

QA/QC: Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

**April 2004**

# Attachment B

## Protocol for Orthophosphate Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P.E.

Sample Collection: The Maine DEP is requesting that orthophosphate analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. The sample must be filtered immediately (within 15 minutes) after collection using a pre-washed 0.45-um membrane filter. Be sure to follow one of the pre-washing procedures described in the approved methods. Also, be aware that you will likely want to use a separate suction hose and collection container for the orthophosphate filtering process. If the sample is being sent to a commercial laboratory or analysis cannot be performed within 2 hours after collection then the sample must be kept at 0-4 degrees C. There is a 48-hour holding time for this sample although analysis should be done sooner, if possible.

QA/QC: Same as described in Total P Protocol.

**April 2004**

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT**
**AND**
**MAINE WASTE DISCHARGE LICENSE**

**FACT SHEET**

DATE: **SEPTEMBER 21, 2005**

PERMIT NUMBER*:* **#ME0100552**
LICENSE NUMBER*:* **#W002686-5L-F-R**

NAME AND ADDRESS OF APPLICANT*:*

**RUMFORD MEXICO SEWERAGE DISTRICT**
**P.O. BOX 160**
**RUMFORD, MAINE 04276**

COUNTY*:* **OXFORD**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**RUMFORD-MEXICO SEWERAGE DISTRICT**
**US ROUTE 2 – RIVER ROAD**
**MEXICO, MAINE 04257**

RECEIVING WATER/CLASSIFICATION: **ANDROSCOGGIN RIVER/CLASS C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. GREGORY TRUNDY**
**SUPERINTENDENT**
**(207) 364-7225**

## 1. APPLICATION SUMMARY

Application: The Rumford-Mexico Sewerage District (District hereinafter) has applied for renewal of Waste Discharge License #W002686-5L-D-R, which was issued on August 10, 2000, WDL modification #W002686-5L-E-M / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100552, which was issued on June 29, 2001, and two administrative modifications issued on October 19, 2001 and April 23, 2004. The 6/29/01 permitting action authorized the monthly average discharge of up to 2.65 million gallons per day (MGD) of secondary treated wastewater to the Androscoggin River, Class C, in Mexico, Maine and expired on August 10, 2005. The 10/19/01 administrative modification eliminated the monthly maximum limit for septage receiving and the 4/23/04 administrative modification served to eliminate the weekly average limit of 10.8 lbs./day total phosphorus.

## 2. PERMIT SUMMARY

a. Terms and Conditions: **This permitting action is similar to the 8/10/00 licensing action, 6/29/01 permitting action and all subsequent administrative modifications thereof in that it is:**

1. Carrying forward the monthly average discharge flow limit of 2.65 MGD;

2. Carrying forward technology-based monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand ($BOD_5$) and total suspended solids (TSS);

3. Carrying forward the requirement to achieve a minimum of 85% removal for $BOD_5$ and TSS;

4. Carrying forward the daily maximum, technology-based concentration limit of 0.3 ml/L for settleable solids;

5. Carrying forward the monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

6. Carrying forward the daily maximum, technology-based concentration limit of 1.0 mg/L for total residual chlorine (TRC);

7. Carrying forward the monthly average concentration and mass reporting requirements for total phosphorus and orthophosphate through permit expiration;

8. Carrying forward the weekly average concentration and mass reporting requirements for total phosphorus and orthophosphate through September 30, 2006;

9. Carrying forward the technology-based pH range limit of 6.0 – 9.0 standard units (SU);

10. Carrying forward screening level whole effluent toxicity (WET) and chemical-specific testing requirements; and

11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except for a reduction in phosphorus monitoring beginning in calendar year 2007.

## 2. PERMIT SUMMARY (cont'd)

**This permitting action is different from the 8/10/00 licensing action, 6/29/01 permitting action and all administrative modifications thereof in that it is:**

1. Establishing a daily maximum discharge flow reporting requirement;

2. Revising the minimum monitoring frequency requirement for total phosphorus from once per week to once per month upon completion of calendar year 2006 phosphorus monitoring;

3. Revising the minimum monitoring frequency requirement for orthophosphate from once per week to twice per month upon completion of calendar year 2006 phosphorus monitoring; and

4. Eliminating the weekly average concentration and mass reporting requirements for total phosphorus and orthophosphate upon completion of calendar year 2006 phosphorus monitoring based on the revised monitoring frequencies.

b. History: The most recent licensing/permitting actions include the following:

April 14, 1994 – The Department issued WDL #W002686-46-C-R to the District for the monthly average discharge of up to 2.65 MGD of secondary treated wastewater to Androscoggin River in Mexico. The 4/14/94 WDL superseded WDL #W002686-46-B-R issued on March 8, 1989 and WDL #2686 issued on September 14, 1983.

April 30, 1999 – The USEPA issued National Pollutant Discharge Elimination System (NPDES) permit #ME0100552 to the District for the monthly average discharge of up to 2.65 MGD of treated wastewater to the Androscoggin River.

May 23, 2000 – Pursuant to Maine law, 38 M.R.S.A. §420 and §413 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W002686-46-C-R by establishing interim monthly average and daily maximum effluent concentration limits of 11.7 parts per trillion (ppt) and 17.6 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury. It is noted the limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as limitations and monitoring requirements have been subject to numerous modifications in recent years. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

January 12, 2001 – The Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program.

## 2. PERMIT SUMMARY (cont'd)

June 29, 2001 – The Department issued WDL Modification #W002686-5L-E-M / MEPDES permit #ME0100552 to the District for the continued discharge of 2.65 MGD to the Androscoggin River. The 6/29/01 permitting action superseded WDL #W002686-5L-D-R issued on August 10, 2000 and all previous NPDES permits and State waste discharge licenses.

October 19, 2001 – The Department issued a letter to the District thereby administratively modifying the 6/29/01 MEPDES permit to eliminate the monthly maximum limit of 120,000 gallons per day (GPD) for disposal of septage in the wastewater treatment facility. The administrative modification carried forward authorization to receive and introduce into the treatment works a daily maximum of up to 10,000 GPD.

April 23, 2004 – The Department issued a letter to the District thereby administratively modifying WDL #W002686-5L-E-M/ME0100552 and eliminating the weekly average mass limit of 10.8 lbs./day for total phosphorus. As of 4/23/04, the Department had not completed a total maximum daily load (TMDL) for the Androscoggin River to determine whether the phosphorus limit, which was based on a Department best professional judgment determination, was appropriate for protection of receiving water quality. Therefore, the numeric phosphorus limit was eliminated.

January 3, 2005 – The Department issued a draft document entitled, Androscoggin River Total Maximum Daily Load, Gulf Island Pond, Livermore Falls Impoundment, December 2004, for public comment.

March 28, 2005 – The District submitted a General Application for renewal of the 6/29/01 MEPDES permit and an application for the Disposal of Septic Tank and Holding Tank Wastes in Wastewater Treatment Facilities. The applications were accepted for processing on March 28, 2005 and the General Application was assigned WDL #W002686-5L-F-R/MEPDES #ME0100552.

May 2005 – The Department submitted the *Androscoggin River Total Maximum Daily Load, Gulf Island Pond, Livermore Falls Impoundment, December 2004* to the USEPA.

July 18, 2005 – The USEPA approved a total maximum daily load (TMDL) entitled, May 2005 TMDL, Final for the Androscoggin River.

c. Source Description: The wastewater treatment facility receives sanitary wastewater generated by 3,000 residential connections and 350 commercial connections located within the towns of Mexico, Rumford, and Dixfield. Each municipality has a separate sewer collection system that delivers domestic wastewater to the treatment facility, which is located one mile downstream of the center of Mexico. The collection system contains 28 pump stations, which are located throughout the area served. The Rumford-Mexico Sewerage District operates and maintains one pump station on Dix Avenue in Mexico, which conveys the majority of Rumford's flows, and two in Rumford on Prospect Avenue and the South Rumford Road. However, 25 other pump stations are operated and maintained by the towns of Rumford and Dixfield.

## 2. PERMIT SUMMARY (cont'd)

The permittee has indicated that there are no combined sewer overflow (CSO) points associated with the District's or the surrounding towns' collection systems. The permittee has indicated that the facility does not receive more than 10% of its flow from industrial users of the system.

The District stated that the only source of wastewater conveyed to the treatment facility by the Rumford Paper Company paper mill located in Rumford is sanitary wastewater. The permittee indicated that the facility wet weather management plan was updated in May 2004. The previous permitting action authorized the District to receive and introduce into the treatment process a daily maximum of up to 10,000 gallons of septage wastes, which is being carried forward in this permitting action based on a written septage management plan dated March 25, 2005.

d. Wastewater Treatment: The facility provides a secondary level of treatment via trickling filters (intermittent use), aeration basins and secondary clarification. Raw sewerage enters the facility through an automatically controlled sluice gate to either a comminutor or bar rack, then to a 12-foot diameter grit chamber and then into a 10,000-gallon wet well. From the wet well, flows are pumped to primary parabolic screens then to two 29-foot diameter by 10-foot deep trickling filters (this system is used only periodically or seasonally as needed) for biological treatment. From the trickling filters, flow is conveyed to one of two 189,000-gallon aeration basins (one may be used for sludge storage) and from the aeration basin to two 189,000-gallon, 55-foot diameter circular secondary clarifiers. Clarifier supernatant is conveyed through a 65,000-gallon chlorine contact tank for disinfection using sodium hypochlorite before final discharge to the Androscoggin River. Wasted sludge is conveyed to two 112,000-gallon digesters, is thickened and subsequently dewatered in a belt filter press, and then composted on site.

Final effluent is conveyed for discharge to the Androscoggin River via a 24-inch diameter outfall pipe that extends out into the receiving water approximately 90 feet to a depth of approximately 6 feet below the surface of the water during low flow conditions. The pipe is not fitted with a diffuser or similar structure designed to enhance mixing of the effluent with the receiving water.

## 3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. §414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, Maine law, 38 M.R.S.A. §420, and Department rule 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program*, require the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Waters Act.

## 4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., §467(1)(A)(2) classifies the Androscoggin River at the point of discharge as a Class C waterway. Maine law, 38 M.R.S.A., §465(4), describes the standards for Class C waters.

## 5. RECEIVING WATER QUALITY CONDITIONS

*The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report*, prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists a 6.8-mile reach of the Androscoggin River, main stem, from Virginia Bridge to Webb River (Hydrologic Unit Code #ME0104000204/Waterbody ID #422R), which includes the receiving water at the point of discharge, as, *"Category 4-B-1: Rivers and Streams Impaired by Pollutants, Pollution Control Requirements Reasonably Expected to Result in Attainment."* Impairment in this context refers to a statewide fish consumption advisory due to the presence of dioxin.

In addition, the Report lists all freshwaters in Maine as *"Category 5-C: Waters Impaired by Atmospheric Deposition."* Impairment in this context refers to the designated use of recreational fishing due to elevated levels of mercury in some fish caused by atmospheric deposition. As a result, the State has established a fish consumption advisory for all freshwaters in Maine. Pursuant to Maine law, 38 M.R.S.A. §420(1-B)(B), *"a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11."* The Department has established interim monthly average and daily maximum mercury concentration limits for this facility.

In addition, the Report identifies a 4.0-mile reach of the Androscoggin River, main stem, four miles upstream of the Gulf Island Dam (HUC #ME0104000208/Waterbody ID #424R) as, *"Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)."* Impairment in this context refers to dissolved oxygen criteria for Class C waters, which is discussed further in the following paragraphs.

Current Water Quality Assessment/Modeling

Two segments of the Androscoggin River are on Maine's 303d list as bodies of water that do not attain Class C water quality standards. According to the total maximum daily load (TMDL) entitled, *Androscoggin River Total Maximum Daily Load Gulf Island Pond, Livermore Falls Impoundment*, prepared by the Department and approved by the USEPA, Gulf Island Pond (GIP) does not attain Class C minimum and monthly average dissolved oxygen (DO) criteria in a four-mile segment directly above Gulf Island Dam, primarily in deeper areas of the water column from 30 to 80 feet of depth. In addition, algae blooms occur from excessive amounts of phosphorus discharged to the river flowing into the pond preventing attainment of the designated uses of water contact recreation. In addition to GIP, the Livermore Falls impoundment just below the International Paper (IP) mill does not attain Class C aquatic life criteria, as indicated by recent water quality evaluations utilizing macro-invertebrate sampling and the use of a linear discriminate modeling.

The pollutants of concern are carbonaceous biochemical oxygen demand (CBOD), orthophosphate (ortho-P), total phosphorus (total-P), and total suspended solids (TSS). Reduction of phosphorus is needed to eliminate algae blooms in Gulf Island Pond. Reduction of CBOD, TSS, and phosphorus is needed to improve DO levels to attainment of Class C criteria. In addition, an in-stream oxygen injection system currently located five miles above Gulf Island Dam needs to be re-designed to inject an additional quantity of oxygen into the pond.

## 5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

Discharges from paper mills located in Berlin, New Hampshire, Rumford, Maine, and Jay, Maine are the major sources of most of the pollutants affecting GIP water quality. Municipal point sources are located in Berlin, New Hampshire, Gorham, New Hampshire, Bethel, Maine, Rumford-Mexico, Maine, and Livermore Falls, Maine.

TSS and algae contribute to sediment oxygen demand (SOD), a major source of oxygen depletion in the deeper areas of Gulf Island Pond. The Department investigated the importance of SOD, oxygen injection, and paper mill BOD input levels on dissolved oxygen levels and summarized the findings in a report entitled, *Androscoggin River Modeling Report and Alternative Analysis, June 2002*. Sediment oxygen demand was found to be the most important factor since the model prediction of DO changed the most within given percentages of change for SOD. Varying oxygen injection rates resulted in the second largest response to model prediction of DO and the amounts input for the paper mill BOD inputs resulted in the lowest response of the model DO. This is a useful exercise in showing that reducing pollutants that contribute to SOD (algae, TSS) and oxygen injection are more efficient remediation actions than reducing paper mill BOD. TSS is the major cause of non-attainment of Class C aquatic life criteria in the Livermore Falls impoundment.

Component analysis and river modeling indicate that the municipal sources of total-P and ortho-P from the Berlin, Gorham, Bethel and Rumford-Mexico POTWs have a *de-minimis* contribution to algae growth in Gulf Island Pond. However, all municipal point sources are included in the TMDL. The component analysis of phosphorus loads discharged in 2004 (Figure 10 of the TMDL) indicates that paper mills are still the largest source of phosphorus and account for about 70% of the total-P and 80% of the ortho-P entering the pond. International Paper is the largest single source accounting for 45% of the total-P and 57% of the ortho-P entering the pond. The Rumford Paper Company is the second largest single source of phosphorus, accounting for about 14% of the total-P and 21% of the ortho-P entering the pond. The Fraser Paper mill in Berlin, New Hampshire accounts for about 11% of the total-P entering the pond, but only 2% of the ortho-P entering the pond. All of the municipal discharges are an insignificant percentage of the total phosphorus entering the pond. The Rumford-Mexico Sewerage District accounts for 1.5% of total phosphorus loads and 4.3% of ortho-P loads at the Gulf Island Pond entrance and is considered to be an insignificant contributor of ortho-P and total-P to the pond. Department modeling also demonstrates that the discharge of BOD and TSS from the Rumford-Mexico facility is insignificant to SOD levels in and DO depletion of Gulf Island Pond. The Androscoggin River TMDL recommends total-P and ortho-P monitoring for the Rumford-Mexico facility to assure phosphorus contributions do not increase significantly with time and evaluation of monitoring data upon completion of the initial phase of the TMDL to determine whether numeric limits are appropriate.

The rapid loss of ortho-P in the 2004 ambient data in the river from Berlin, New Hampshire to Jay, Maine implies a high ortho-P assimilation rate. The ortho-P appears to remain nearly constant from Jay to Turner, Maine implying a low ortho-P assimilation rate. The difference is likely because the Androscoggin River is shallower and more free-flowing from Berlin to Jay as opposed to below Jay, which is impounded and deep. Shallower water is more suited to growth of bottom-attached plants which uptake ortho-P. The Department's experience modeling ortho-P uptake in other rivers indicates that as ortho-P concentrations increase, the rate of assimilation of ortho-P also increases.

## 5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The threshold for phosphorus in the TMDL is to maintain the pond averaged chlorophyll-a to under 10 parts per billion (ppb). There are different combinations of total-P and ortho-P that could result in obtaining this goal.

Gulf Island Dam contributes to non-attainment of DO criteria and the growth of algae blooms by creating an environment of low water movement and low vertical mixing within the water column. Modeling also indicates that the presence of the dam accounts for about 20% of the algae levels in Gulf Island Pond with the TMDL implemented. Non-attainment of Class C DO criteria in deeper portions of the pond is predicted by the water quality model, even if point source discharges are eliminated, due to sediment oxygen demand from natural and non-point sources of pollution. There are limited opportunities for the control of significant amounts of non-point source pollution given the relatively undeveloped nature of this large watershed.

Based on identification through component analysis and river modeling that the Rumford-Mexico Sewerage District is not a significant source of phosphorus loading to Gulf Island Pond, this permitting action is establishing monitoring requirements for ortho-P and total-P, rather than numeric limitations, to facilitate the collection of data for continued evaluation of receiving water quality conditions. Additional discussion of phosphorus monitoring is included in Section 6(g) of this fact sheet.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established a monthly average discharge flow limit of 2.65 million gallons per day (MGD) based on the design capacity of the treatment facility, which is being carried forward in this permitting action. This permitting action is establishing a daily maximum discharge flow reporting requirement to assist in evaluation of effluent data. This permitting action is also carrying forward the continuous recorder monitoring requirement for discharge flow.

b. Dilution Factors: Dilution factors associated with the discharge from the Rumford-Mexico wastewater treatment facility were derived in accordance with freshwater protocols established in Department rule Chapter 530.5, *Surface Water Toxics Control Program*, October 1994. With a monthly average treatment plant design flow of 2.65 MGD, dilution calculations are as follows:

Acute: 1Q10 = 1,663 cfs $\Rightarrow \frac{(1{,}663.0 \text{ cfs})(0.6464) + 2.65 \text{ MGD}}{2.65 \text{ MGD}} = 407{:}1$

Modified Acute: ¼ 1Q10 = 416 cfs $\Rightarrow \frac{(416.0 \text{ cfs})(0.6464) + 2.65 \text{ MGD}}{2.65 \text{ MGD}} = 102{:}1$

Chronic: 7Q10 = 1,663 cfs $\Rightarrow \frac{(1{,}663.0 \text{ cfs})(0.6464) + 2.65 \text{ MGD}}{2.65 \text{ MGD}} = 407{:}1$

Harmonic Mean = 2,861 cfs $\Rightarrow \frac{(2{,}861.0 \text{ cfs})(0.6464) + 2.65 \text{ MGD}}{2.65 \text{ MGD}} = 699{:}1$

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Department rule Chapter 530.5 states:

> *Analysis using numerical acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone, according to EPA's Mixing Zone Policy and to ensure a Zone of Passage of at least ¾ of the cross-sectional area of any stream as required by Department rule. Where it can be demonstrated that a discharge achieves complete and rapid mixing with the receiving water, by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design flow, up to and including all of it, as long as the required Zone of Passage is maintained.*

The District has not submitted information or data to the Department to demonstrate the mixing characteristics of the effluent with the receiving waters. Therefore, the Department is utilizing the default stream flow of ¼ 1Q10 in acute evaluations in accordance with Chapter 530.5.

c. Biochemical Oxygen Demand ($BOD_5$) and Total Suspended Solids (TSS): The previous permitting action established monthly average and weekly average $BOD_5$ & TSS concentration limits of 30 mg/L and 45 mg/L, respectively, which were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule 06-096 CMR Chapter 525(3)(III). The previous permitting action also established daily maximum $BOD_5$ & TSS concentration limits of 50 mg/L based on a Department best professional judgment (BPJ) of best practicable treatment (BPT). All three technology-based concentration limits are being carried forward in this permitting action.

Department rule 06-096 CMR Chapter 523(6)(f) states that all pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass. The previous permitting action established monthly average, weekly average and daily maximum technology-based mass limits of 663 lbs./day, 995 lbs./day, and 1,105 lbs./day, respectively, for $BOD_5$ & TSS, which are being carried forward in this permitting action and were derived as follows:

Monthly Average Mass Limit: (30 mg/L)(8.34 lbs./gallon)(2.65 MGD) = 663 lbs./day
Weekly Average Mass Limit: (45 mg/L)(8.34 lbs./gallon)(2.65 MGD) = 995 lbs./day
Daily Maximum Mass Limit: (50 mg/L)(8.34 lbs./gallon)(2.65 MGD) = 1,105 lbs./day

The previous permitting action established, and this permitting action is carrying forward, a requirement for a minimum of 85% removal of $BOD_5$ & TSS pursuant to Department rule 06-096 CMR Chapter 525(3)(III)(a)(3) and (b)(3).

This permitting action is carrying forward the minimum monitoring frequency requirement of three times per week (3/Week) based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

d. Settleable Solids: The previous permitting action established a daily maximum technology-based concentration limit of 0.3 ml/L for settleable solids and a minimum monitoring frequency requirement of once per day (1/Day), which are being carried forward in this permitting action. The daily maximum concentration limit of 0.3 ml/L is based on a Department BPJ determination that this limit provides sufficient information to assess whether the treatment facility is providing BPT, and the minimum monitoring frequency requirement is based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD.

e. *Escherichia coli*: The previous permitting action established, and this permitting action is carrying forward, seasonal (May 15 – September 30) monthly average and daily maximum concentration limits for *E. coli* bacteria of 142 colonies/100 ml (geometric mean) and 949 colonies/100 ml (instantaneous level), respectively, which were based on the State of Maine Water Classification Program criteria for Class C waters found at 38 M.R.S.A. §465(4)(B), and a minimum monitoring frequency requirement of three times per week (3/Week) based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD. Although *E. coli* bacteria limits are seasonal and apply between May 15 and September 30 of each year, the Department reserves the right to impose year-round bacteria limits if deemed necessary to protect the health, safety and welfare of the public.

f. Total Residual Chlorine (TRC): The previous permitting action established a daily maximum technology-based concentration limit of 1.0 mg/L for TRC and a minimum monitoring frequency requirement of once per day. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department licensing/permitting actions impose the more stringent of either a water quality-based or BPT based limit. End-of-pipe acute and chronic water quality based concentration thresholds may be calculated as follows:

| | | | Calculated | |
|---|---|---|---|---|
| Acute (A) Criterion | Chronic (C) Criterion | Modified A & C Dilution Factors | Acute Threshold | Chronic Threshold |
| 0.019 mg/L | 0.011 mg/L | 102:1 (Mod. A)<br>407:1 (C) | 1.98 mg/L | 4.48 mg/L |

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. The BPT-based limit of 1.0 mg/L is more stringent than the calculated acute water quality-based threshold of 1.98 mg/L and is therefore being carried forward in this permitting action. This permitting action is carrying forward the minimum monitoring frequency of once per day (1/Day), which is less frequent than Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD, based on a Department best professional judgment of the appropriate level of monitoring necessary to assess compliance with this parameter. A review of the most recent 60 months of TRC and bacteria effluent data on file with the Department indicates the District has had only one exceedence of the chlorine and bacteria limits. TRC monitoring must be performed during any period in which chlorine-based compounds are in for effluent disinfection. For instances when chlorine-based compounds are not used for disinfection during an entire reporting period, the facility shall report **"NODI-9"** for this parameter on the monthly Discharge Monitoring Report (DMR).

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

g. Total Phosphorus (Total-P) and Orthophosphate (Ortho-P): The previous permitting action established weekly average concentration and mass reporting requirements for total phosphorus (total-P) during the warm season (June 1 – September 30) and a three-year schedule of compliance for imposition of a weekly average total-P mass limit of 10.8 lbs./day. The mass limit was scheduled to become effective on June 1, 2004 and was based on a Department BPJ determination of the level necessary to protect receiving water quality and to prevent algal blooms in the Gulf Island Pond portion of the Androscoggin River. On April 23, 2004, the Department administratively modified the 6/29/01 permit to eliminate the weekly average mass limit of 10.8 lbs./day as expectations to finalize the Androscoggin River TMDL were not completed. The administrative modification did, however, carry forward the requirement to report weekly average concentration and mass values for total-P, establish a new requirement to report monthly average and weekly average concentration and mass values for orthophosphate (ortho-P), and established a new requirement to report monthly average concentration and mass values for total-P during the warm season (June 1 through September 30) of each year of the remaining term of the permit.

As discussed in Section 5 of this Fact Sheet, *Receiving Water Quality Conditions*, component analysis and river modeling performed by the Department indicates that the District's discharge does not constitute a significant source of phosphorus loading to the Androscoggin River and Gulf Island Pond. Therefore, this permitting action is:

1) Carrying forward monthly average concentration and mass reporting requirements for total-P and ortho-P between June 1 and September 30 of each year;

2) Carrying forward weekly average concentration and mass reporting requirements for total-P and ortho-P during the period of June 1, 2006 through September 30, 2006;

3) Carrying forward the minimum monitoring frequency requirement of once per week for total-P and ortho-P through September 30, 2006;

4) Revising the minimum monitoring frequency requirement for total-P from once per week to once per month (1/Month) beginning June 1, 2007 and lasting through permit expiration;

5) Revising the minimum monitoring frequency requirement for ortho-P from once per week to twice per month (2/Month) beginning June 1, 2007 and lasting through permit expiration;

6) Eliminating weekly average concentration and mass reporting requirements for total-P and ortho-P beginning upon completion of calendar year 2006 phosphorus monitoring based on the change in monitoring frequencies.

In accordance with Special Condition N of this permit, the Department reserves the right to re-open this permit at any time, with notice to the permittee, to revise the monitoring frequencies and/or establish effluent limits for phosphorus based on the final Androscoggin River TMDL. Total P and ortho-P sampling and analysis shall be performed in accordance with Attachments A and B of this permit, respectively, unless otherwise specified by the Department.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

h. pH: The previous permitting action established a pH range limitation of 6.0 – 9.0 standard units based on Department rule found at Chapter 525(3)(III)(c), which is being carried forward in this permitting action. This permitting actions also carrying forward the minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 1.5 and 5.0 MGD.

i. Whole Effluent Toxicity (WET) & Chemical-Specific Testing: Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program* ("toxics rule"), set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET and chemical-specific (priority pollutant) testing, as required by Chapter 530.5, is included in order to fully characterize the effluent. This permit also provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment and receiving water characteristics.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Chemical-specific, or "priority pollutant (PP)," testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria.

Pursuant to criteria established in Department rule Chapter 530.5, the Rumford-Mexico Sewerage District has been placed in the low frequency category for WET testing as the facility has a chronic dilution factor greater than 100:1 and is free of the defining characteristics of the high and medium frequency categories. The facility has been placed in the high frequency category for chemical-specific (priority pollutant) testing as the facility is permitted to discharge more than 1.0 MGD.

Department rule Chapter 530.5(B)(7)(c) contains provisions and criteria for reduced testing of municipal discharges. The Department's *Toxicity Program Implementation Protocols* states, *"Facilities with all dilution factors equal to or greater than 20:1 and no reasonable potential over a full five year cycle may receive a reduction to one round of screening testing for the complete suite of chemical specific priority pollutants."* Based on this provision and an evaluation of the data on file at the time of the previous permitting action, the previous permitting action established screening level only WET and chemical-specific testing for the District and a requirement to submit, on an annual basis, a certification [Chapter 530.5(B)(7)(c)(iii)] that the characteristics and nature of the discharge had not changed from those on which reduced testing was granted.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Department Rule Chapter 530.5 and Protocol E(1) of a document entitled *Maine Department of Environmental Protection, Toxicity Program Implementation Protocols*, dated July 1998, states that statistical evaluations shall be periodically performed on the most recent 60 months of WET and chemical-specific data for a given facility to determine if water quality based limitations must be included in the permit.

On September 12, 2005, the Department conducted a statistical evaluation on the aforementioned WET and chemical-specific test results on file with the Department in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and Maine Department of Environmental Protection Guidance, July 1998, entitled *Toxicity Program Implementation Protocols*.

**The 9/12/05 statistical evaluation indicates that the discharge does not exceed or have a reasonable potential (RP) to exceed the modified acute (0.98%) or chronic (0.25%) critical ambient water quality criteria thresholds for any of the WET species tested to date.**

**The 9/12/05 statistical evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed critical thresholds or ambient water quality criteria for any of the pollutants tested.**

The Department has made the determination that the District qualifies for, and this permitting action is carrying forward, a reduction in WET and chemical-specific testing pursuant to Department rule Chapter 530.5(B)(7)(c). Therefore, this permitting action is carrying forward the screening level WET testing requirement and minimum monitoring frequency requirement of once per year (1/Year) and the screening level chemical-specific testing requirement and minimum monitoring frequency requirement of once per calendar quarter (1/Quarter) in consecutive calendar quarters.

Screening level testing shall be completed in the 12-month period prior to the expiration date of this permit. In the interim, no surveillance level testing is required. In accordance with Department rule Chapter 530.5(B)(7)(c) and Special Condition L of this permit, *Chapter 530.5(B)(7(c)(iii) Certification*, **the permittee must annually submit to the Department a written statement evaluating its current status for each of the four conditions listed in Special Condition L of this permit.**

## 7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class C classification.

## 8. PUBLIC COMMENTS

Public notice of this application was made in the *Rumford Falls Times* newspaper on or about March 30, 2005. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

## 9. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

William Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7659

## 10. RESPONSE TO COMMENTS

During the period of May 13, 2005 through June 13, 2005, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the District. No significant comments were received during the public comment period; therefore, a response to comments was not prepared.